



SIGNING AND MARKING DESIGN GUIDELINES

**Georgia Department of Transportation
935 East Confederate Avenue, Building 24
Atlanta, Georgia 30316**

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11/2008	Edition 2.0	ALL	Revised and Combined Interstate and Limited Access Roadway Signing and Marking Design Guidelines and Non-Interstate Signing and Marking Design Guidelines
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**GEORGIA DEPARTMENT OF TRANSPORTATION
SIGNING AND MARKING DESIGN GUIDELINES**

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SECTION 1 INTRODUCTION

These design guidelines provide standards, guidelines, and specifications that will be used for the design of traffic signing and pavement markings prepared for the Georgia Department of Transportation (GDOT). These design guidelines include a compilation of specific drafting and design standards, plan and specification presentations, and review procedures to ensure that construction documents properly convey the extent and character of work to be performed. Sound traffic engineering judgment shall be exercised in applying these guidelines. Along with the companion document on traffic signal design, these documents contain comprehensive guidelines intended to provide consistency in plans for traffic control devices.

This document replaces previous editions of Non-Interstate Signing and Marking Design Guidelines and Interstate and Limited Access Roadway Signing and Marking Design Guidelines.

1.1 Definitions

MUTCD – Manual on Uniform Traffic Control Devices – Approved by the Federal Highway Administration as the national standard for the placement and standardization of all signs, signals, and markings placed on public facilities.

AASHTO “Green Book” – A Policy on Geometric Design of Highways and Streets as published by the American Association of State Highway and Transportation Officials (AASHTO), latest edition adopted by GDOT. Design standards outlined in this publication shall govern most geometric considerations. This publication provides guidance on the physical design of highways and streets.

Physical gore – The point, as defined in the AASHTO “Green Book,” where the ramp intersects with the mainline facility and the pavement surface changes.

Theoretical gore (“painted gore”) – The point, as defined in the AASHTO “Green Book,” where the ramp separates from the mainline facility.

Entrance ramp end – The point, as defined in the AASHTO “Green Book,” where the full width of the ramp entering a facility becomes less than the full lane width.

Guide signs – Show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information.

Warning signs – Give notice of a situation that might not be readily apparent.

Regulatory signs – Give notice of traffic laws or regulations.

Special roadside signs – Guide signs that are manufactured using extruded aluminum panels and that are ground-mounted.

Overhead signs – Signs that are manufactured using extruded aluminum panels and are mounted over the roadway facility.

- *Type I, bridge overhead sign structure* – A horizontal structure that spans the roadway and is supported at each end by columns.
- *Type II, cantilever overhead sign structure* – A horizontal structure that is supported at one end by a single column. No new Type II structures shall be installed.
- *Type III, butterfly overhead sign structure* – A horizontal structure that extends in opposite directions from a single column support.
- *Type IV, combination overhead sign structure* – A horizontal structure with two supports, only one of which is at one end of the structure.
- *Type V, cantilever overhead sign structure* – A single, rigid, tube-type horizontal arm that is supported at one end by a single tubular support pole.
- *Type VI, bridge overhead sign structure* – A single, rigid, tube-type horizontal structure that is supported at both ends by single tubular support poles.
- *Type VII, bridge-mounted overhead sign structure* – A structural frame that is attached to a grade-separation structure. Caution is to be used in attaching signs to bridges in accordance with the February 8, 1980 [memorandum](#) from J.T. Kratzer, PE, State Bridge Engineer, to Archie C. Burnham, PE, State Traffic and Safety Engineer.
- *Type VIII, butterfly overhead sign structure* – Single rigid tube type horizontal arms extending in opposite directions from a single column support.

Interstate – A freeway (divided highway with full control of access).

Non-Interstate – An expressway (a divided highway with partial control of access).

Conventional Road – A street or highway other than a freeway, expressway or special purpose road.

Special Purpose Road – A low-volume, low speed road that serves recreational areas or resource development activities.

1.2 Applicable Standards and Specifications

The following specific documents will govern all work efforts:

[GDOT Standard Specifications – Construction of Transportation Systems](#) – Latest edition and supplements thereto. Documents listed below provide more detail concerning specific traffic engineering design elements, but all work must be in accordance with the GDOT Standard Specifications.

[GDOT Signing and Marking Details](#)

[GDOT Standard Detail Sheets](#)

[GDOT Construction Details](#)

[GDOT Plans Presentation Guide \(PPG\)](#)

[GDOT Electronic Data Guidelines \(EDG\)](#)

[MUTCD](#) – Latest edition adopted by GDOT. This document shall govern those aspects of the application of all signs, signals, and pavement markings.

Standard Highway Signs (Federal Highway Administration [FHWA])

[Americans with Disabilities Act](#)

AASHTO “Green Book” – A Policy on Geometric Design of Highways and Streets as published by AASHTO, latest edition adopted by GDOT. Design standards outlined in this publication shall govern most geometric considerations. This publication provides guidance on the physical design of highways and streets.

AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals – This document provides criteria for structural design.

[FHWA Work Zone Traffic Control Practices Manual](#)

[Roadside Design Guide](#)

[GDOT Design Guide](#)

SECTION 2 GENERAL INFORMATION

The following standards apply to the preparation and presentation of signing and marking plans.

2.1 Drafting Standards

Drafting standards shall follow the requirements of the [EDG](#).

2.2 Electronic File Structure

Electronic file structure shall follow the requirements of the [EDG](#).

2.2.1 Cell Libraries

The Office of Traffic Operations has a cell library that contains standard cells for signs and pavement marking items. The signing and marking design cell file (as well as other GDOT design cell files) is available from the [GDOT ROADS web site](#).

2.3 Signing and Marking Plan Sheets

Prepare plan sheets to show all permanent roadway signs and pavement markings as they appear upon completion of the project. Place emphasis on designing clear directional signage, identifying roadway names, and coordinating sign placement with signal or utility poles, roadway features, structures, sight distances, and driver awareness. Signing and marking plan sheets shall be the same scale as the construction plans and should use the same match lines. Signing and marking plan sheets shall follow the requirements of the [PPG](#).

2.3.1 Required Information

2.3.1.1 Pavement markings: Depict and label all required pavement markings to indicate color, width, and spacing as appropriate on each sheet. While it is not necessary to label each pavement item, at least one note typically referencing the applicable standard should be placed on each sheet. Refer to the Pavement Marking Selection Chart located in page 2-2.

2.3.1.2 Raised pavement markers: Depict and label all required raised pavement markers to indicate color, type, and spacing as appropriate on each sheet. While it is not necessary to label each pavement item, at least one note typically referencing the applicable standard should be placed on each sheet.

2.3.1.3 Signs: Show the location of required signs symbolically and give a representation of the sign face. Orient the symbol, sign code, and sign face to correspond to the direction of travel of the motorists for which they are intended. Reference the placement station, sign code, and size of each sign in a uniform manner throughout the plan set.

2.3.2 Sheet Layout

The signing and marking plan sheet layout shall follow the requirements of the [PPG](#).

2.4 General Notes

The general notes for signing and marking shall be included within the plan assembly's general notes section. Refer to the [PPG](#) for sheet sequence.

Signing and marking plans may contain the following general note sheets:

- [Standard Signs General Notes](#)
- [Special Roadway Signs General Notes](#)
- [Overhead Highway Signs General Notes](#)

2.5 Summary of Quantities Sheets

Quantities for pavement markings and signs are presented on separate sheets. Typically, the removal of pavement markings and signs is paid for as part of traffic control lump sum; therefore, it should not be in the summary of quantities unless it is a special circumstance. This is covered in Section 150 of the [GDOT Standard Specifications for Construction of Transportation Systems](#).

The Summary of Quantities for Pavement Markings sheet lists the type and quantity for traffic stripes, raised pavement markers, arrows, words, and symbols.

The Summary of Quantities for Standard Signs sheet presents sign and sign post quantities in a tabular format. Each sign is listed separately by station and sign code. No two separate sign installations shall have the same station number. All signs should be offset by 1 foot, if necessary. There are separate columns for Type 1 and Type 2 sign material and Type 3 and Type 9 reflective sheeting material. Sign posts are separated into Type 7, 8, and 9 posts. If there is more than one sign on a post, then the post is listed in the same row as the first sign on the post.

The Summary of Quantities for Signing and Marking shall be included within the plan assembly's summary of quantities section. Refer to the [PPG](#) for sheet sequence.

Signing and marking plans may contain the following summary of quantity sheets:

- [Summary of Quantities – Pavement Markings](#)
- [Summary of Quantities – Standard Signs](#)
- [Summary of Quantities – Special Roadside Signs](#)
- [Summary of Quantities – Remove and Remount Special Roadside Signs](#)
- [Summary of Quantities – Overhead Highway Signs](#)
- [Summary of Quantities – Remove Overhead Highway Signs and Structures](#)
- [Summary of Quantities – Remove and Reset of Logo Signs](#)
- Summary of Quantities - Delineator and Milepost

2.6 Sign Detail Sheets

Sign detail sheets shall be developed for special signs or signs with unique or non-standard legends. Sign detail sheets shall be located after the signing and marking plan sheets. Sign templates are provided in [Appendix A](#) of this document. An example sign detail sheet is shown in [Figure 2-1](#).

2.7 Clearance Diagrams

Clearance diagrams shall be developed for overhead highway signs. Clearance diagrams shall be located after signing and marking plan sheets.

Additional requirements for [clearance diagrams](#) are included in subsequent sections of this document.

SECTION 3 SIGN DESIGN STANDARDS

3.1 General Sign Guidelines

The following are design guidelines regarding the development of signing and pavement marking plans:

1. Sign sizes are determined by the roadway classification. The standard sign size (as defined in tables within in various Parts of the MUTCD and in the “Standard Highway Signs and Marking” book Section 1A.11 and 12) shall be used on two-lane and four-lane roads regardless of speed limit; on four-lane divided roads with speed limits less than 55 miles per hour (mph); and on five-lane roads with speed limits of 45 mph or less. With the exception of route confirmation signing, the expressway sign size is to be used on divided four-lane roads with speed limits of 55 mph or greater and on five-lane roads with speed limits greater than 45 mph. The freeway sign size is to be used on all limited-access roads.
2. Single-plate signs greater than 9 square feet in area or greater than 48 inches in width shall be erected on two posts.
3. Type 1 material is used on signs with areas less than or equal to 9 square feet, while Type 2 material is used on signs greater than 9 square feet in area. Type 1 and Type 2 material refers to the sign blank itself. The difference between Type 1 and Type 2 material is the thickness of the sign blank (.08 inch for Type 1 and .10 inch for Type 2).
4. The second specification in the signing pay items refers to reflective sheeting. Type 3 is an encapsulated, prismatic lens that is commonly referred to as high-intensity. Type 9 is a wide-angle prismatic lens and is also referred to as very high intensity. The use of each type of reflective sheeting is defined in the following subsection.
5. Signs shall not be placed back-to-back on one post unless they are identical in size and shape.

3.2 Regulatory Signs

All red series signs (R1-1, R1-2, R1-3p, R5-1, and R5-1a) shall have Type 9 (very high intensity) reflective sheeting backgrounds. All other regulatory signs shall have Type 3 (high intensity) reflective sheeting backgrounds unless specified otherwise.

3.2.1 Stop Signs (R1-1)

Stop signs on state routes or on roads approaching state routes should be a minimum of 36 inches in width. Stop signs of 48 inches in width should only be used based on engineering judgment on the basis of an engineering study or in accordance with traffic engineering practices.

3.2.2 Yield Signs (R1-2)

Yield signs on state routes or on roads approaching state routes should be a minimum of 36 inches in width on conventional roads and 48 inches in width on expressways.

3.2.3 Speed Limit Signs (R2-1)

Speed limits on non-interstate roads should be confirmed after every junction with a numbered (state or U.S.) route. In rural areas in the absence of junctions with numbered routes, speed limits are to be confirmed at a maximum 5 mile interval, with a preferred 2 mile interval and at political boundaries. In more developed or higher vehicular volume areas, this interval should be reduced to a 2 mile interval. Speed limit signs are also placed at speed limit changes.

3.2.4 Right (Left) Lane Must Turn Right Signs (R3-7)

Right Lane Must Turn Right signs should be used when the right turn lane drops (trap lane). Left Lane Must Turn Left signs should be used when the left lane drops only. Refer to Section 2B.19.05 of the 2009 MUTCD edition.

3.2.5 Keep Right Signs (R4-7)

R4-7 signs (keep right) should be installed only at the beginning of a physical median (raised or depressed) and on raised medians only when the median width (face-of-curb to face-of-curb distance) is 4 feet or greater. Install ten (10) feet behind nose. Refer to Figure B-1 in [Appendix B](#).

3.2.6 Do Not Enter Signs (R5-1)

R5-1 signs (do not enter) should be placed on the outside shoulder and should not be placed more than 50 feet from the median nose station measured along the roadway.

3.2.7 Wrong Way Signs (R5-1a)

R5-1a signs (wrong way) should be placed 200 feet from R5-1 (do not enter) signs.

3.2.8 Divided Highway Crossing Signs (R6-3)

R6-3 signs (divided highway crossing) should be used under R1-1 signs only on four-lane divided roadways. R6-1 signs (one way) should be used on all divided roadways with medians that are greater than 30 feet wide. Divided roadways with medians less than 30 feet wide should not include R6-1 signs. See figures 2B-15 and 2B-16 of the 2009 MUTCD.

3.2.9 State Line Signing

Specific signs and sign sequences are required on all roadways entering the state. Refer to Figure 3-1 in [Appendix F](#) for all signs and sign installation order that shall be installed on expressways and conventional roadways. Contact GDOT Office of Traffic Operations for freeway (limited access) roadway signage.

3.3 Warning Signs

All warning signs on State Routes shall have Type 9 (very high intensity) reflective sheeting backgrounds and shall be a minimum of 36 inches. The setback distance for intersection warning signs shall be as recommended in the 2009 MUTCD, Table 2C-4. This distance shall be measured from either the radius point of the crossroad or the stopping point (stop bar) when there is no deceleration lane. When turn lanes are present, intersection advance warning signs shall be

placed 150' in advance of the beginning of the taper(s). W3-1 and W3-3 signs may be measured from the intersection stopping point (stop bar). W3-5 signs may be used in conjunction with speed limit reductions and shall be placed in accordance with section 2B.13 of the 2009 MUTCD.

Guidance for the curve ahead can be found in the 2009 MUTCD, Table 2C-5 (Horizontal Alignment Sign Selection).

3.3.1 Road Name Signs Used in Conjunction with Warning Signs (W16-8)

These signs are supplemental to warning signs and shall have yellow reflectorized backgrounds with black legends, borders, and symbols.

W16-8 signs (road name signs) shall be used in rural areas when the side road has a local name only. County road numbers shall not be used on W16-8 road name signs. W16-8 signs shall be installed below the “advance intersection warning” sign or the “signal ahead” sign (when used). Arrows required for two street names.

Six-inch lettering should be used on all W16-8 signs with the first letter upper case and the remaining letters lower case. The maximum width of the sign is recommended to be within 10% of the advanced warning sign width. Refer to [figure 2C-12](#) (MUTCD page 132).

3.3.2 Bicycle Warning Signs (W11-1)

Bicycle warning signs should be placed on roadways intersecting those that have bicycle facilities, i.e. bike lanes or shoulders as depicted in [Appendix C](#).

3.3.3 Share the Road Signs (W16-1)

Share the road signs should not be used on designated marked or striped bicycling facilities. Roadways where paved shoulders or bicycle lanes are present will not be considered unless a special safety or road courtesy problem exists.

Signs should be considered for installation at locations that meet at least one or more of the following criteria:

- Where there is significant bicycle traffic (where motorists are likely to pass one or more bicyclists at least every three miles during peak traffic hours).
- After a bike lane ends and bicyclists and motorists enter a shared lane situation.
- On stretches of road that are used to connect two sections of a shared use path.
- Roadway sections with a significant history of bicycle crashes.
- Where there is a documented conflict or courtesy problem between motor vehicles.
- Where there are gaps in paved shoulders or where shoulder width is reduced.
- Where curb lane widths are narrower than 12' for multi-lane roadways, or narrower than 14' for 2-lane roadways. Roads and bridges where no reasonable alternate route exists.
- Where motorists and bicyclists have reduced sight distance.

3.4 Guide Signs

3.4.1 Route Markers

Route markers are either 24 inches in width (one- or two-digit numbers) or 30 inches in width (three-digit numbers) on all roads, except on limited-access roads, where they are either 36 inches in width (one- or two-digit numbers) or 45 inches in width (three-digit numbers). Cardinal direction signs are 24 inches in width on all roads, except on limited-access roads, where they are 30 inches in width.

When more than one type of route marker is used within an assembly, the order of preference is interstate, U.S., state (left to right, top to bottom). Within the same classification of route marker, the order of preference is from lowest number to highest number.

3.4.1.1 Placement Guidelines

Routes shall be confirmed after every junction with a numbered (state or U.S.) route. In rural areas in the absence of junctions with numbered routes, the routes are to be confirmed at a maximum 5-mile interval and a preferred 2-mile interval. In more developed or higher vehicular volume areas, this interval should be reduced to a 2 mile interval.

[Figure 3-2](#), [Figure 3-3](#), and [Figure 3-4](#) provide typical route signing through different cases of intersecting routes. These figures show four-lane divided roads, but they also apply to two-lane roads. “Overhead span wire” signs should be used on approaches of all multilane state route approaches to other state routes. The use of overhead signs may eliminate the need for some shoulder mounted signs. See section 3.6.

3.4.1.2 Mile Post Signing

Mile Post signs shall be confirmed at 1-mile interval in rural areas and 0.2-miles interval in urban areas.

3.4.2 Destination (D1), Distance (D2), and General Information (I) Signs

D1, D2, and I signs shall have Type 3 (high intensity) green reflectorized backgrounds with white reflectorized legends, borders, and symbols. The borders shall be determined by sign height as shown in Table 3-1 below. The corner radii shall be as shown in the appendix of the Standard Highway Signs booklet.

Table 3-1: Sign Height and Border Width

Sign Height	Border
12"	3/8"
24"	1/2"
36"	5/8"
48"	3/4"

3.4.3 Directional Signs (DBRN) for Recreation and Cultural Interest Areas

Directional signs that are recreationally or culturally oriented shall be designated as DBRN signs. These signs shall have Type 3 (high intensity) brown reflectorized backgrounds with white reflectorized legends, borders, and symbols. The borders shall be determined by sign height as shown in the table for D1, D2, and I signs. The corner radii shall be as shown in the appendix of the Standard Highway Signs booklet.

3.4.4 Tourist-Info Visitor Center

Directional signs used for tourist-oriented purposes shall have blue Type 3 (high intensity) reflectorized backgrounds with white reflectorized legends, borders, and symbols. Per 2009 MUTCD, Section 2K in page 320.

3.4.5 Lettering Guidelines

For non-interstate signs, there shall not be more than a one-series difference between legends within a sign (i.e., use Series D and C, not Series D and B).

Refer to [Figure 3-5](#), [Figure 3-6](#), [Figure 3-7](#), and [Figure 3-8](#) for guidelines for lettering and sign layout for destination signs, road name signs, and political boundary signs. The most recent GDOT-approved software program shall be used for all sign designs.

3.5 School Zone and Pedestrian Crossing Signs

All school zone signs (S1-1, S2-1, S3-1, S4-3, S4-5 and the top portion of S5-1) and pedestrian crossing signs (W11-2) shall have Type 9 (very high intensity) fluorescent yellow-green reflective sheeting backgrounds. In addition, signs within the same assembly as those school zone signs specifically listed above and all regulatory signs placed as part of the school zone signing shall have Type 9 (very high intensity) reflective sheeting backgrounds of the appropriate color.

3.6 Overhead Span Wire Signs

Overhead span wire signs shall be used whenever there are multiple turn lanes in any one direction (dual left-turn lanes or dual right-turn lanes). On state routes, U.S. routes, or interstate ramps, overhead span wire signs should be used on the approaches of multilane state route approaches to other state routes.

Overhead span wire signs may be used in other situations based upon engineering judgment. If overhead span wire signs are used, some shoulder-mounted post signs can be omitted. See Overhead Signing Detail ([Figure 3-9](#)) for proper placement on the span wire. Overhead Street Name signs should be composed of initial upper-case letters at least 12 inches in height and lower-case letters at least 9 inches in height. **The total length of sign should not exceed 120 inches.** Refer to MUTCD 2D-2, page 163.

Typical sign installations on surface streets will be post-mounted in accordance with the MUTCD. Certain special situations may warrant the installation of overhead signing. The following is a list of situations that may warrant the installation of overhead signing instead of a

post-mounted sign, but each individual occurrence must be properly studied and concurrence received from the General Office of Traffic Operations before a final determination is made:

- Traffic volumes at or near capacity
- Complex intersection and/or signalization design
- Three or more traffic lanes in each direction
- Restricted sight distance
- Closely spaced intersections
- Interstate exit ramps
- High percentage of truck traffic
- Very high travel speeds
- Insufficient space for ground signs
- Dropping a through lane as a turn-only lane

All overhead span wire signs shall have Type 9 (very high intensity) reflective sheeting. Strain poles for overhead span wire signs shall be shown on construction and utility plan sheets with station & offset in accordance with the [EDG](#).

It is recommended that the levels for drainage and utilities be turned on temporarily while placing strain poles to minimize conflicts.

3.7 Sign Posts

3.7.1 Description

Type 7, 8, and 9 sign posts are square tube posts. Type 8 posts are larger than Type 9 posts. Type 9 posts are larger than Type 7 posts. Only Type 8 posts may be installed on a breakaway sign support. For reference, see Construction Detail T-3A and T-3B.

3.7.2 Wind Loads

The primary factor in selecting the appropriate type of post is the amount of resistance required to withstand the applied wind load. Use Construction Detail T-3A and T-3B to select the proper square tube post.

SECTION 4 LOCATION AND SEQUENCE OF SIGNS (INTERSTATE/LIMITED ACCESS)

To provide for proper spacing between signs and to provide consistent information to the motoring public, a standard sequence and spacing are desirable when exiting and entering an interstate or other limited-access facility. It is desirable to locate signs at a minimum 800 feet apart; however, because of physical constraints, this may not be possible. As a minimum, the designer should maintain spacing at 500 feet between signs.

4.1 Exit Signing

The timely display of information provides the road user exiting a limited-access facility with critical information to make a decision without being confused. The MUTCD classifies interchanges as follows:

Major interchanges – Subdivided into two categories: (a) interchanges with other expressways or freeways; or (b) interchanges, other than those named in (a), with high-volume multilane highways, principal urban arterials, and major rural routes where the volume of interchanging traffic is heavy or includes many road users unfamiliar with the area.

Intermediate interchanges – Interchanges with urban or rural routes not in the category of major or minor interchanges as defined herein.

Minor interchanges – Interchanges with local, very light traffic, such as interchanges with land service access roads. Where the sum of exit volumes is estimated to be lower than 100 vehicles per day in the design year, the interchange is classified as minor.

For major interchanges, two advance guide signs shall be used, but three signs are preferred. Placement should be at 2 miles, 1 mile, and 0.5 mile in advance of the theoretical gore of the exit when three signs are used. When only two advance guide signs are used, they shall be placed 1 mile and 0.5 mile in advance of the theoretical gore of the exit. Interstate-to-interstate interchange advance guide signs should be diagrammatic (see the current version of the MUTCD).

For intermediate and minor interchanges, two advance guide signs should be used. Placement should be at 1 mile and 0.5 mile from the theoretical gore of the exit.

All interstates with three or more lanes in each direction require overhead guide signs. All interstates with four or more lanes in each direction require signs to be placed over travel lanes.

All interchanges require an overhead exit guide sign placed at the theoretical gore of the exit ramp. [Figure 4-1](#) indicates the locations of the required exit signs.

Rest areas require only one advanced exit sign placed 1 mile in advance of the theoretical gore of the ramp. An exit gore sign is required at the physical gore of the exit ramp.

To accommodate physical constraints associated with the location of advance exit signs, consideration may be given to moving the location of the advance signs up to 0.5 mile and adjusting the legend in 0.25-mile increments.

All signing should display the same destinations and order on all signs in the same direction. The closest destination should be listed first. If the destinations include a road, the road should be listed first on the signs.

For interchanges where it is desirable to indicate more than three destinations, a supplemental sign may be used. Supplemental guide signs should be located between the 0.5-mile and 1-mile exit signs.

The use of other signs within the exit sign sequence is to be avoided unless the signs are political boundary signs or required regulatory signs, warning signs, or logo signs. When possible, logo signs should be placed before the 1-mile sign ([see Section 11](#)).

The default background color for all guide signs is green. For guide signs that are clearly associated with cultural and recreational destinations, the background shall be brown. Interstate shields and guide signs for evacuation routes shall have a blue background. In addition, information signs concerned with road user services shall have a blue background. These signs include ride share, 511, hospital, rest area, dial 911, and tourist information signing. These signs shall have Type 3 (high intensity) Reflective Sheeting. Refer to Color Code per 2009 MUTCD, Section 1A.12.

Color Code

- A. Black—regulation
- B. Blue—road user services guidance, tourist information, and evacuation route
- C. Brown—recreational and cultural interest area guidance
- D. Coral—unassigned
- E. Fluorescent Pink—incident management
- F. Fluorescent Yellow-Green—pedestrian warning, bicycle warning, playground warning, school bus and school warning
- G. Green—indicated movements permitted, direction guidance
- H. Light Blue—unassigned
- I. Orange—temporary traffic control
- J. Purple—lanes restricted to use only by vehicles with registered electronic toll collection (ETC) accounts
- K. Red—stop or prohibition
- L. White—regulation
- M. Yellow—warning

4.2 Post-Interchange Sequence Signing

If an interchange is for new traffic that is entering the facility, the sign sequence must identify the route and speed limit. Interchanges associated with traffic that is continuing on the facility (e.g., rest areas, weigh stations) do not require a post-interchange sign sequence. The standard sequence of signs to be provided is described below and is shown in [Figure 4-2](#).

Merge Sign – If the entrance ramp is a non-continuing lane, the merge sign shall be a W4-1X (48), where the X shall be either R (for right) or L (for left) depending on the side of the mainline road on which the ramp is located. The W4-1X (48) sign shall be located 500 feet in advance of the physical gore of the entrance ramp. The W4-5 sign shall be used on entrance ramps when the mainline W4-1 is not visible from the ramp.

Added Lane Sign – If the entrance ramp is a continuing lane, the added lane sign shall be a W4-3X (48), where the X shall be either R (for right) or L (for left) depending on the side of the mainline road on which the ramp is located. The W4-3X(48) sign shall be located as close as possible to the physical gore of the entrance ramp and where the sign may be viewed by both mainline and entrance ramp traffic. The W4-6 sign shall be used on entrance ramps when the mainline W4-3 sign is not visible from the ramp.

Route Confirmation Sign – The route shield(s) and direction(s) should be indicated 500 feet beyond the end of the entrance ramp.

Speed Limit Sign – The speed limit sign should be placed 1,000 feet beyond the route confirmation sign. Refer to [GA CODE § 40-6-181](#).

Minimum Speed Sign – The minimum speed sign should be placed 1,000 feet beyond the speed limit sign (when used).

Distance Sign – As an option, a distance sign may be used that gives the distance to the next exit and a control city. This sign should be located 1,000 feet beyond the speed limit sign in place of the minimum speed sign. The mileage shall be the distance to the center of the destination. Any destinations listed on the sign other than the control city shall be associated with the next exit.

In locations with closely spaced interchanges, the post-interchange sequence may have to be altered or eliminated because of exit signing for the next interchange.

4.3 Mile point Signs

D10-4 signs should be placed every 0.5 mile in rural areas. D10-5 signs should be placed every 0.2 mile in urban areas.

4.4 Political Boundary Signs

Political boundary signs on the interstate are required at the boundary of political entities (county and city). These signs must be placed as close to the actual boundary as possible and shall have a green background. If the political entity has a speed detection permit, then an I550-1 sign (speed checked by detection devices) is required and should be located 500 feet beyond the political boundary sign (see [Figure 4-3](#)).

4.4.1 Specialty Signs for Champion Signs

Recommend signs to be cluster together at or near the political boundary outside the shoulder points vs. spread out along the roadside.

4.5 Waterway Signs

Signs indicating waterways shall be posted only if the waterway is located on the state map. These signs shall have a green background and shall be placed immediately prior to the waterway crossing. Refer to 2009 MUTCD, Figure 2H-1.

4.6 Hospital Signs

Hospital signs are supplemental guide signs and shall have a blue background. Placement of these signs shall be in accordance with GDOT's Policy and Procedures (P&P) 6775-1.

4.7 Bridge Caution Signs

W8-13 signs (bridge ices before road) shall be located 500 feet in advance of any bridge structure.

4.8 No Trucks Over 6 Wheels Allowed in Left X Lanes Signs

R554-X signs (no trucks over 6 wheels allowed in left X lanes) are standard regulatory signs that are attached to overhead road bridge structures. The value of X is determined by subtracting 2 from the number of lanes (including a high-occupancy vehicle lane if present).

4.9 Truck Use I-285

The R554-11 sign (all thru trucks over 6 wheels must use I-285) is a standard regulatory sign that is attached to overhead road bridge structures (see [Figure 4-4](#)).

4.10 Emergency Parking Only Signs

R8-4 signs (emergency parking only) are standard regulatory signs that should be posted at 8- to 10-mile intervals.

4.11 Up to \$1,200 Fine for Throwing Trash on Highway Signs

R553-1 signs (up to \$1,200 fine for throwing trash on highway) are standard regulatory signs that should be posted at 8- to 10-mile intervals and at the state boundary (see [Figure 4-6](#)).

4.12 Slower Traffic Keep Right Signs

R4-3 signs (slower traffic keep right) are standard regulatory signs that should be posted at 6- to 8-mile intervals. This sign is to be posted on the left side of the road (in the median).

4.13 Keep Off Median Signs

R11-1 signs (keep off median) are standard regulatory signs that should be posted at 6- to 8-mile intervals in areas where there is a grassed median. This sign is to be posted on the left side of the road (in the median).

4.14 Reduced Speed Ahead Signs

W3-5 signs (reduced speed ahead) shall be posted in advance of speed limit reductions, per MUTCD.

4.15 Overhead Regulatory Signs

R570-1 & 570-2 (move over...) signs, and R570-3 & 570-4 (move accidents...) signs should be posted at approximately 20-mile intervals and at the state boundary. Refer to [Figure 4-5](#), [Figure 4-6](#), Figure 4-7, and Figure 4-8, in Appendix F.

4.16 Miscellaneous Signs

R554-1 signs (lights on when raining), R560-1 signs (click it or ticket), and R560-2 signs (they kill, don't do it) signs are regulatory signs that should be posted at approximately 20-mile intervals and at the state boundary. Refer to [Figure 4-5](#), [Figure 4-6](#), Figure 4-7, and Figure 4-8, in Appendix F.

SECTION 5 SPECIFIC SIGN SEQUENCING FOR PARTICULAR APPLICATIONS

The sequence and spacing of signs for specific applications are defined and should be adhered to using sound engineering judgment. These particular applications are lane reduction, lane drop (continuous lane), and lane drop (auxiliary lane).

5.1 Lane Reduction for Interstates

The lane reduction application is used for ending a lane between interchanges. See [Figure 5-1R](#) for a right-lane drop and [Figure 5-1L](#) for a left-lane drop. These figures indicate the four warning signs, the sign spacing, and the pavement marking spacing required. The signs are:

- W20-5AX (0.5 mile) – Right/left lane ends in 0.5 mile
- W20-5AX (1500 FT) – Right/left lane ends in 1,500 feet
- W9-1X – Right/left lane ends
- W4-2X – Graphical right/left lane ends

5.2 Lane Reduction for Conventional Roads

If there is insufficient room for all three lane width transition signs, omit the W9-2 sign. If there is insufficient room for the remaining two lane width transition signs, use the W4-2 sign only. The lane reduction signing requirements are shown on [Figure B-1](#).

5.3 Lane Drop – Continuous to Exit Lane

The lane drop – continuous to exit lane application is used for ending a lane as part of an exit where the lane has been continuous prior to the exit. [Figure 5-2](#) indicates the specific signs and the sign and pavement marking spacing required. The only sign required other than the exit signing is the “right lane exit only” sign ([R553-7](#)).

5.4 Lane Drop – Auxiliary Lane

The lane drop – auxiliary lane application is used for ending a lane as part of an exit where the lane has not been continuous prior to the exit. [Figure 5-3](#) indicates the specific signs and the sign and pavement marking spacing required. The only sign required other than the exit signing is the “right lane exit only” sign ([R553-7](#)).

5.5 Lane Drop – Drop Option

The lane drop – drop option application is used for ending a lane as part of an exit when a second exit lane has the option of exiting. [Figure 5-4](#) indicates the specific signs required.

SECTION 6 STANDARD SIGNS

6.1 General

Standard signs are mounted on square tube sign posts (Type 7, Type 8, or Type 9). [Figure 4-5](#), [Figure 4-6](#), and [Figure 6-1](#) show the details of Georgia-specific signs.

The area (square footage) of the sign determines the type of sign material that is used for each sign. If the area exceeds 9 square feet, Type 2 sign material is required. For any sign with an area less than or equal to 9 square feet, Type 1 sign material may be used.

Design plans must specify the number, type, length, and spacing of sign posts for standard signs. All standard signs greater than 48 inches in width require the use of at least two sign posts. [Figure 6-3](#) provides a chart for the selection of the number and type of sign posts. To use the chart, the width, height, area, and mounting height of the sign must be known. Details for mounting a single sign support are also shown on [Figure 6-2](#). [Figure 6-3](#) shows the details for mounting signs using a breakaway support. [Figure 6-4](#) shows the standard signs and the mounting holes in the sign blanks.

The design plans identify the locations of standard signs to be installed with the station number, sign code, and sign template with no dimensions. No two signs shall have the same station number. The locations of standard signs that shall be removed are indicated by the sign template with no dimensions, the station number, and the note “REMOVE HIGHWAY SIGN, STANDARD X EACH.” Existing standard signs that shall remain are shown with the sign template with no dimensions and the note “RETAIN IN PLACE.”

The removal of signs is normally paid for as part of clearing and grubbing. If a sign is to be retained, the pay items “Remove” and “Replace” should be used to ensure the proper reflective sheeting is used.

Examples of the summary of quantities sheets are provided in [Appendix D](#).

Examples of the general notes sheets are provided in [Appendix E](#).

SECTION 7 SIGN LAYOUTS

7.1 General

Sign detail layouts are provided for specific applications. The length of the legend should be calculated for each sign by using the most recent GDOT-approved software. Sign measurements shall be in 6-inch increments.

Table 7-1 shows the border and radius requirements for all sign layouts.

Table 7-1: Border and Radius Requirements

Sign Height	Less than 3'-0"	3'-0" to 5'-0"	5'-6" to 7'-0"	7'-6" to 10'-0"	Greater than 10'-0"
Border	*1"	*1"	2"	2"	3"
Radius	3"	6"	9"	12"	12"

*Signs 5'-0" or less in height with 10" or 12" capital letters or 13.33" upper case/10" lower case and greater letters shall have 2" borders.

Exit panels shall have 1" border and 3" radius.

Sign layouts for specific signs are detailed in figures as shown below.

Code	Sign Legend	Figure
R554-5	NO TRUCKS OVER 6 WHEELS ALLOWED IN LEFT LANE	7-1
R554-11	ALL THRU TRUCKS OVER 6 WHEELS MUST USE I-285	4-4
	RIDESHARE	7-2
R554-X	NO TRUCKS OVER 6 WHEELS ALLOWED IN X LEFT LANES	7-1

Appendix A provides details and use of the layout. The signs are grouped by categories of advance exit signs, intermediate exit signs, exit signs, destination signs, and political boundary signs. This includes:

- Exit numbering – Numbered or unnumbered
- Mounting – Overhead or ground
- Sign sequence position – Advance, intermediate, or exit
- Exit lane arrangement – Normal, one lane continuous, one lane continuous with an optional lane, two or more lanes continuous
- Number of destination lines on the sign – One, two, or three
- Exit route shields and directions – Interstate shield, U.S. or Georgia route shield, cardinal directions

SECTION 8 SPECIAL ROADSIDE SIGNS INTERSTATES/FREEWAYS

8.1 General

Special roadside signs are ground-mounted signs that require extruded aluminum panels. Typical special roadside signs include destination signs, political boundary signs, hospital signs, exit gore signs, and supplemental guide signs. Use [Detail T-3B](#) to select the proper square tube posts and footings. Advanced exit signs and exit signs are also classified as special roadside signs if the facility is two lanes or less.

The height, width, and cross section of the sign are used to calculate the foundation and structural shape posts needed. The information can be calculated by using current GDOT standards referenced as:

[#9054A](#): Erection and Foundation Details for Special Roadside Signs, Breakaway Type Posts

[#9054B](#): Erection and Foundation Details for Special Roadside Signs, Breakaway Type Posts

[#9054C](#): Erection and Foundation Details for Special Roadside Signs, Breakaway Type Posts

Only structural steel shape or square tube posts shall be used. The post length is a function of the height of the sign and the cross-section slope. Standard 9054A indicates that the bottom of the sign should be at least 7 feet above the outside normal edge of pavement. In addition, no portion of the sign shall be less than 1 foot above the ground.

Special roadside signs with structural shape posts have a foundation that requires concrete. The amount of concrete is dependent on the foundation type, post size(s), and depth of the foundation. Table 8-1 provides calculations for the amount of concrete. D is the depth of the footing.

The locations of special roadside signs to be installed are identified on the plans with the station number, special sign number, and sign template with overall sign dimensions. The special sign number is a unique number assigned to all special roadside signs that are removed or installed. This number is in station order and requires that all signs with the same size and legend have the same number. The sign number is unique to each type of sign. Special roadside signs are defined with a two-digit number.

Table 8-1: Class A Concrete for Special Roadside Signs

TYPE 1 FOOTING

D (ft)	Concrete (ft³)	D (ft)	Concrete (ft³)	D (ft)	Concrete (ft³)
3'-0"	5.3013	8'-3"	14.5785	13'-3"	23.4140
3'-3"	5.7430	8'-6"	15.0203	13'-6"	23.8558
3'-6"	6.1848	8'-9"	15.4621	13'-9"	24.2976
3'-9"	6.6266	9'-0"	15.9039	14'-0"	24.7394
4'-0"	7.0684	9'-3"	16.3456	14'-3"	25.1811
4'-3"	7.5101	9'-6"	16.7874	14'-6"	25.6229
4'-6"	7.9519	9'-9"	17.2292	14'-9"	26.0647
4'-9"	8.3937	10'-0"	17.6710	15'-0"	26.5065
5'-0"	8.8355	10'-3"	18.1127	15'-3"	26.9482
5'-3"	9.2772	10'-6"	18.5545	15'-6"	27.3901
5'-6"	9.7190	10'-9"	18.9963	15'-9"	29.8318
5'-9"	10.1608	11'-0"	19.4381	16'-0"	28.2736
6'-0"	10.6026	11'-3"	19.8798	16'-3"	28.7153
6'-3"	11.0443	11'-6"	20.3216	16'-6"	29.1571
6'-6"	11.4861	11'-9"	20.7634	16'-9"	29.5989
6'-9"	11.9279	12'-0"	21.2052	17'-0"	30.0407
7'-0"	12.3697	12'-3"	21.6469	17'-3"	30.4824
7'-3"	12.8114	12'-6"	22.0887	17'-6"	30.9242
7'-6"	13.2532	12'-9"	22.5305	17'-9"	31.3660
7'-9"	13.6950	13'-0"	22.9723	18'-0"	31.8078
8'-0"	14.1368				

Deduct concrete for post sizes below from D values above for Type 1 footings.

Post Size	Concrete (ft³)	Post Size	Concrete (ft³)
S3x5.7	0.0138	W8x18	0.0780
S4x7.7	0.0185	W8x21	0.1139
W6x9	0.0304	W10x22	0.1200
W6x12	0.0428	W10x26	0.1424
W6x15	0.0721	W12x26	0.1545

TYPE 3 FOOTING

Post Size	Concrete (ft³)	Post Size	Concrete (ft³)
S3x5.7	20.7347	W8x18	28.0343
S4x7.7	20.7302	W8x21	31.8265
W6x9	24.5478	W10x22	31.8204
W6x12	24.5352	W10x26	31.7075
W6x15	28.0402	W12x26	31.7859

8.2 Placement

The locations of special roadside signs to be removed are shown on the plans with the station number, sign template with no dimensions, special sign number, and the following note: “REMOVE HIGHWAY SIGN SPECIAL ROADSIDE, X EACH,” where X is the number of signs to be removed. Special roadside signs that shall be left are noted with “RETAIN IN PLACE.”

The following are common pay items associated with special roadside signs:

Item No.	Description	Unit
500-3101	CLASS A CONCRETE	CY
610-6520	REM HIGHWAY SIGN, SPCL ROADSIDE	EA
633-3500	REMOUNT UNMODIFIED HIGHWAY SIGN, SPCL ROADSIDE	EA
636-1072	HIGHWAY SIGNS, ALUM EXTRUDED PANELS, REFL SHEETING, TP 3	SF
636-2080	GALV STEEL POSTS, TP 8	LF
636-2090	GALV STEEL POSTS, TP 9	LF
636-3000	GALV STEEL STR SHAPE POST	LB
636-9094	PILING IN PLACE, SIGNS, STEEL H, HP 12 X 53	LF

Each special roadside sign to be installed requires a layout showing the details of that sign with all of the dimensions. These are provided on Details of Special Roadside Signs sheets. The [Special Roadside Signs General Notes](#) are required on one of the Details of Special Roadside Signs sheets.

- An example of the [Summary of Quantities for Special Roadside Signs](#) to be installed sheet and [Summary of Quantities, Remove and Remount Special Roadside Signs](#) is provided in Appendix D.

SECTION 9 OVERHEAD HIGHWAY SIGNS/STRUCTURES

9.1 General

Overhead highway signs are signs that are mounted over the roadway on overhead highway sign structures. All advance exit signs and exit signs on facilities that have three lanes or more in one direction shall be installed overhead. In addition, the “no trucks over six wheels in left X lane(s)” sign (R554-X, [Figure 7-1](#)) is mounted on bridges or other structures as an overhead sign. Refer to section 4.15.

Approval from the State Bridge Design Engineer is required before attaching sign(s) to a bridge.

9.2 Placement

Advance exit signs may be mounted on Type I, Type III, or Type VII sign structures. Type I or Type VII structures are required if the advance exit sign is for an exit-only lane. Type I structures are required for all signs that contain arrows. All structures require barrier or guardrail protection.

All interstates with three or more lanes in each direction require overhead guide signs. All interstates with four or more lanes in the direction of travel require guide signs to be placed over the travel lane.

Each overhead sign requires a clearance diagram that indicates the relative position of each sign and the position of the structure with relationship to the roadway cross section. The clearance diagram also indicates the layout of each overhead sign, including all dimensions. Type I structures require that the entire width of the roadway be shown with future signs. See [Section 10](#) for more information on clearance diagrams.

All overhead signs on a single structure should be the same height with the exception of general information or regulatory signs such as Rest Area or an R554-X. A minimum 1-foot horizontal spacing shall be maintained between each sign.

The locations of overhead signs to be installed are identified on the plans with the station number or mile post, special overhead sign number, sign template with overall sign dimensions, and a note indicating the structural support number and structure type. The special overhead sign number is a unique number assigned in station order to each special overhead sign that is removed or installed. If the sign is removed with the sign structure, then no special overhead sign number is assigned. The sequence of sign numbers for overhead signs should begin with a sequence that is not used by the special roadside signs. For example, if there are less than 100 numbered special roadside signs, the overhead sign numbers should begin with 101.

The structural support number combines an alphabetic code for the direction and facility with the milepost location in tenths of a mile. See [Figure 9-1](#) for Overhead Sign Structure Numbering. For example, I-95 southbound uses the alphabetic code of HH, so an overhead structure located at milepost 67.5 on I-95 southbound becomes structure number HH0675. The note for the location of new overhead signs and structure should be “STRUCTURAL SUPPORT #YYYY

TYPE Z STRUCTURE REQUIRED,” where X = alphabetic code for facility and direction, YYY = milepost location in tenths of a mile, and Z = type of overhead sign structure.

The locations of overhead signs to be removed as part of a sign structure are shown on the plans with the station number, sign template with no dimensions, and the following note: “REMOVE STRUCTURAL SUPPORT #XXXXY, TYPE Z – LUMP.”

Removal shall include the following:

- Removing structure, complete, from STA. AAAA+AA, I-BB CBL (including removal of concrete footing to a depth of 1 foot below the existing ground line)
- Disposing of sign and structure by the contractor, unless specified otherwise in the plans.

Where:

X – Alphabetic code for the interstate facility and direction

Y – Milepost for the location in tenths of a mile

Z – Overhead sign structure type

A – Station number

B – Number of the interstate facility

C – Cardinal direction of the facility

The following are common pay items associated with overhead signs and structures.

Item No.	Description	Unit
610-6510	REM HWY SIGN, OVHD	EA
610-9401	REM STR SUPPORT, TYPE 1, , STA - AAAA + BB	LUMP
610-9402	REM STR SUPPORT, TYPE 2, , STA - AAAA + BB	LUMP
610-9403	REM STR SUPPORT, TYPE 3, , STA - AAAA + BB	LUMP
610-9407	REM STR SUPPORT, TYPE 7, , STA - AAAA + BB	LUMP
633-3000	REMOUNT UNMODIFIED HIGHWAY SIGN, OVERHEAD	EA
636-1072	HIGHWAY SIGNS, ALUM EXTRUDED PANELS, REFL SHEETING, TP 3	SF
636-1072	HIGHWAY SIGNS, ALUM EXTRUDED PANELS, REFL SHEETING, TP 3 INCLUDING BRACKETS	SF
638-1001	STR SUPPORT FOR OVERHEAD SIGN, TP I, STA - AAAA + BB	LUMP
638-1003	STR SUPPORT FOR OVERHEAD SIGN, TP III, STA - AAAA + BB	LUMP
638-1007	STR SUPPORT FOR OVERHEAD SIGN, TP VII, STA - AAAA + BB	LUMP
641-1200	GUARDRAIL, TP W	LF
641-5001	GUARDRAIL ANCHORAGE, TP 1	EA
641-5012	GUARDRAIL ANCHORAGE, TP 12	EA

An example of the [Summary of Quantities for Overhead Highway Signs](#) is provided in Appendix D.

SECTION 10 CLEARANCE DIAGRAMS FOR OVERHEAD SIGNS

10.1 General

Clearance diagrams are required for all overhead signs. The length of the legend should be calculated for each sign using the current GDOT-approved software. Sign measurements shall be in 6-inch increments.

10.2 Design Elements

Critical elements on the clearance diagrams are:

- Project Number
- The location of existing guardrail or barrier wall
- The cross section of the roadway and shoulders, including the widths of paved surfaces
- The location of any proposed guardrail or median barrier to protect sign structures within the clear area that are not of breakaway construction
- The horizontal and vertical location of the signs in relation to the cross section of the roadway and lanes
- The structural support number and station number
- The sign design layout
- The design sign area (sq. ft.) for the **existing** structure.
- The design sign area (sq. ft.) for the **proposed** structure.
- The location of any footings for the sign structure
- Structure Type
- Bridge Name and Number for Type VII Bridge Attachments

The location of existing guardrail is indicated on the clearance diagram by the note “EXISTING GUARDRAIL.” The location of existing guardrail or barrier should be shown for all roadways within the clear zone of the proposed structure, including frontage roads and in medians. Existing guardrail should be verified to meet current standards.

An example of a clearance diagram for a Type I structure is shown on [Figure 10-1](#). New Type I structures should be designed to accommodate **maximum loading**. The **maximum loading (sq. ft.)** can be calculated by multiplying the width of the roadway plus half of each shoulder by maximum height of 22 feet.. [Figure 10-2](#) shows an example of a clearance diagram for a Type III structure. The maximum sign width shall be 25 feet for Type III structures. [Figure 10-3](#) is an example of a clearance diagram for a Type I structure with a concrete median barrier. [Figure 10-4](#) is an example of a clearance diagram for a Type VII structure.

The placement of guardrail and barrier wall must also be shown on the plan view of the plans. The placement must be in accordance with GDOT standards.

The GDOT standard for a median barrier is Standard 4940, CONCRETE BARRIER.

Construction details of Type 26 and 26S median barriers with sign supports are shown on [Figures 10-5](#) and [Figure 10-6](#), respectively.

The Overhead Highway Signs General Notes shall be included with the first clearance diagram.

SECTION 11 SPECIFIC SERVICE SIGNS (LOGO SIGNS)

11.1 General

The design and location of logo signs are not normal parts of an interstate signing project. The design and installation of logo signs are a function of Georgia Specific Service Signs, which designs, installs, and maintains these signs on the right-of-way. However, in the design of an interstate signing project, there may be conflicts with existing logo signs. As part of the interstate signing project, it is required that any logo signs that conflict with locations where a new sign is to be installed be moved and remounted. Relocation should be considered if a special roadside or overhead sign structure needs to be installed within 800 feet of the logo sign.

The GDOT Policies and Procedures (P & P) [6775-10](#), Standards for Signs Giving Specific Information – LOGO Business Signs, details the specific information on design and placement of logo signs. The relocation of any logo signing should be in accordance with this document. Relocation of one logo sign for an interchange may require moving other logo signs to provide for the sequence of 24-hour pharmacies, attractions, camping, lodging, food, and gas in the direction of travel.

An example of the [Summary of Quantities for Removing and Resetting Logo Signs](#) sheet is provided in Appendix D.

The following are common pay items associated with relocating logo signs.

Item No.	Description	Unit
610-9000	REM SIGN, STA -	LS
611-5550	RESET SIGN, STA -	LS

Designer/Contractor will need to coordinate with Georgia Logos, LLC 404-831-0434 for removal & replacement of LOGO signs. Replacement cost should be included in overall bid price. Existing signs shall remain during construction on a movable structure. New signs to be installed at proposed locations when construction activities conclude in the area.

SECTION 12 PAVEMENT MARKING DESIGN STANDARDS

12.1 Materials

Pavement marking material is typically thermoplastic or paint; however, preformed material with contrast should be used on bridges and all other concrete surfaces. Widths for longitudinal lines, hatching, and stop bars are defined in the [GDOT Signing and Marking Details](#). Striping should be offset two (2) inches from the longitudinal joint. Pavement marking material should conform to [Policies and Procedures \(P&P\) 6146-2](#) for maintenance activities.

12.1.1 Pavement Marking Selection Chart

It is the policy of the Georgia Department of Transportation to place and maintain pavement markings on the State Highway and Interstate Systems in accordance with the Manual of Uniform Traffic Control Devices. This policy governs the selection and use of pavement marking materials for construction and maintenance projects on fresh pavement. See Material Compatibility Matrix to determine whether recommended materials can be used over existing markings.

AADT	Asphalt			Concrete		
	2 Lanes	>2 Lanes	Interstate /Freeway	2 Lanes	>2 Lanes	Interstate/ Freeway
<8,000	H or T	H or T		F* or P*	F* or P*	
$8,000 \geq n < 15,000$	T	T	T or P	F* or P*	F* or P*	F* or P*
$\geq 15,000$	T or P	T or P	T or P	F* or P*	F* or P*	F* or P*
<p>H – High build Paint and Wet Weather Paint Traffic Stripe (652), T – Standard and Wet Weather Thermoplastic Traffic Stripe (653), F –Preformed Plastic Pavement Markings (657). P – Standard and Wet Weather Polyurea Traffic Stripe (658),</p> <ol style="list-style-type: none"> 1. *8” contrast markings shall be used for all lane lines on PCC surfaces (includes skip and edge lines). 2. Words and symbols shall be thermoplastic (653) or preformed material (657). Raised pavement markers (654) shall be used on all roadways in all categories. 3. Preformed plastic pavement marking material should not be used on pavements with open-graded surface treatment. 4. Wet Reflective material shall be used on all interstates and freeways. Wet Reflective material should also be used on routes where lane departure crashes exceed the statewide average for comparable routes or where analysis of crash data indicates a need. The State Traffic Engineer or State Maintenance Engineer may request use of wet reflective markings on a case-by-case basis. 						

12.2 Pavement Markings

12.2.1 Edge lines shall be placed on all paved roadways, including curb and gutter sections. When the width of a roadway with curb and gutter exceeds the normal distance from face of gutter to face of gutter for the number of travel lanes, the edge line shall be placed the appropriate distance from the centerline markings based on a lane width of 12 feet. Edge lines shall not be placed on roadways with curb and gutter if parallel or angle parking is permitted.

12.2.2 Bicycle Lanes

All pavement markings for bicycle lanes, including the edge line separating vehicular and bicycle traffic, shall be paint. [Appendix C](#) contains examples of pavement markings for bicycle lanes.

12.2.3 Crosswalks

The design of crosswalks shall be in accordance with the [GDOT Signing and Marking Details](#). The installation of crosswalks shall conform to the attached [Crosswalk Guidance](#) and shall be provided across paved public side roads where sidewalk exists. Contrast Tape (black/white) shall be used on all concrete surfaces.

12.2.4 Borders around detail yellow striping and borders around detail white striping are included in the square yard pay item as indicated in the [Construction Detail T-14](#).

12.2.5 Pavement marking “ONLY” should be where a thru lane becomes a turn lane and where multiple adjacent left turn lanes exist as indicated in the [Construction Detail](#).

12.2.6 Pavement marking arrows should be spaced every 100 feet (150 feet if “ONLY” words are used) as indicated in the [Construction Detail](#).

12.3 Raised Pavement Markers

Raised pavement markers shall be provided in the design for all new roadways and on reconstruction where new pavement marking will be provided. The [GDOT Signing and Marking Details](#) referenced above describe each type of marker and provide guidelines for the location and spacing of raised pavement markers.

12.4 Guidance on Marking Crosswalks

This guidance is intended to address the need to provide safer pedestrian crossings on Georgia’s roads. The guidance promotes engineering strategies to decrease pedestrian injuries and fatalities. Research indicates that simply marking a crosswalk does not necessarily improve pedestrian safety, and in some situations may decrease pedestrian safety. This guidance establishes the recommended pedestrian crossing treatment for various types of roadways.

Guidance:

The following provisions for pedestrian facilities at intersections are recommended for Georgia DOT preconstruction and maintenance projects, commercial driveway, and access permits:

12.4.1 Controlled Intersections:

- a. At signalized intersections, marked crosswalks should be placed across all approaches that have adequate ADA and pedestrian accommodations/displays. Limited right-of-way and other limiting factors may not allow adequate pedestrian access.
- b. At all-way stops, marked crosswalks should be placed across all roads where there is sidewalk, or any evidence of pedestrian movement (such as worn paths on the roadside, transit stops, adjacent land uses that generate pedestrian trips – schools, parks, retail, dense residential development, etc).

12.4.2 Uncontrolled Intersections:

- a. At uncontrolled intersections *, where only the side road is required to stop or yield, marked crosswalks should be placed across all side roads where there is sidewalk, or any evidence of pedestrian movement (such as worn paths on the roadside, transit stops, adjacent land uses that generate pedestrian trips – schools, parks, retail, dense residential development, etc).
- b. At uncontrolled locations*, see Table 12-1, marked crosswalks and/or additional crossing enhancements should be placed across the state route or main route in accordance with Table 1.
- c. Marked crosswalks may be used at non-signalized street crossing locations in designated school zones to delineate preferred pedestrian paths across roadways. Use of adult crossing guards, school signs and markings, and/or traffic signals with pedestrian signals (when warranted) should be considered in conjunction with the marked crosswalk, as needed.
- d. Crosswalks and pedestrian crossing improvements at uncontrolled mid-block locations should be considered on a case-by-case basis based on sound engineering judgment or an engineering study.

Exceptions:

Crosswalks should not be installed at locations with poor sight distance, complex or confusing designs, or substantial heavy truck volume without first providing adequate design features and/or traffic control devices.

TABLE 12-1: Crosswalk Criteria

Roadway Type (number of Travel Lanes and Median Type)	Vehicle ADT ≤ 9,000			Vehicle ADT > 9,000 to 12,000			Vehicle ADT >12,000 to 15,000			Vehicle ADT >15,000		
	Speed Limit**											
	≤30 mph	35 mph	40 mph	≤30 mph	35 mph	40 mph	≤30 mph	35 mph	40 mph	≤30 mph	35 mph	40 mph
Two Lanes	C	C	P	C	C	P	C	C	N	C	P	N
Three Lanes	C	C	P	C	P	P	P	P	N	P	N	N
Multilane (four or more lanes) with raised median***	C	C	P	C	P	N	P	P	N	N	N	N
Multilane (four or more lanes) without raised median	C	P	N	P	P	N	N	N	N	N	N	N

* These guidelines include intersection and midblock locations with no traffic signals or stop signs on the approach to the crossing. They do not apply to school crossings. Crosswalks should not be installed at locations that could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone will not make crossings safer, nor will they necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g., raised median, roadway narrowing, enhanced overhead lighting, curb extensions), as needed, to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding where to install crosswalks.

** Where the speed limit exceeds 64.4 km/h (40 mi/h), marked crosswalks alone should not be used at unsignalized locations.

*** The raised median or crossing island must be at least 1.2 m (4 ft) wide and 1.8 m (6 ft) long to serve adequately as a refuge area for pedestrians, in accordance with MUTCD and American Association of State Highway and Transportation Officials (AASHTO) guidelines.

C = Candidate sites for marked crosswalks. Marked crosswalks must be installed carefully and selectively. Before installing new marked crosswalks, an engineering study is needed to determine whether the location is suitable for a marked crosswalk. For an engineering study, a site review may be sufficient at some locations, while a more indepth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, and other factors may be needed at other sites. It is recommended that a minimum utilization of 20 pedestrian crossings per peak hour (or 15 or more elderly and/or child pedestrians) be confirmed at a location before placing a high priority on the installation of a marked crosswalk alone.

P = Possible increase in pedestrian crash risk may occur if crosswalks are added without other pedestrian facility enhancements. These locations should be closely monitored and enhanced with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.

N = Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased by providing marked crosswalks alone. Consider using other treatments or other substantial crossing improvement to improve crossing safety for pedestrians.

SECTION 13 ROUNDABOUT SIGNING AND MARKING

13.1 General

This chapter provides standards and guidelines that must be used in the design of roundabout traffic signing and pavement markings prepared for the Georgia Department of Transportation (GDOT). All signs and markings provided in this chapter conform to the *Manual on Uniform Traffic Control Devices (MUTCD)* and the *National Cooperative Highway Research Program (NCHRP) Report 672*.

13.2 Signing

13.2.1. Advanced Warning Signs

Advance roundabout warning signs with advisory speed plaques may be required. Whenever topography or driver distraction precludes adequate advance visibility of the roundabout or if the speed limit is 45 mph or greater, add a supplemental advanced roundabout warning sign. The supplemental sign may also be used temporarily or permanently whenever a roundabout is modified or a new roundabout constructed as a retrofit to an existing intersection. See detail RA-3 for placement of W2-6 signs.

13.2.2 Yield Sign

Yield signs R1-2 shall be placed on the right of the road at the point where vehicles are to yield when entering the roundabout. Supplemental yield signing in the splitter island may be required due to alignment or sight distance problems where a single yield is not adequate. "YIELD" pavement marking is required where field observation warrants.

13.2.3 Guide Signs

- a. D1-5 or D1-5A guidance signs should be used as required for the junction of numbered routes for state route and recommended for county route approaches. Advance destination guide signs. D1-5, diagrammatic style signs are preferred on rural high speed roadways because they reinforce the form and the shape of the approaching intersection.
- b. Signs with State Route shields and street name signs with a minimum of 6" lettering should be placed on the splitter islands oriented toward traffic on the circulatory roadway. Flag type guide signs indicating the correct directional exit for service, recreational and cultural destinations are required for major destination routes. (See Figure 2D-9, MUTCD 2009)
- c. If D1-5 is not used, the state route shields or street name signs shall be used in the splitter island. (See Figure 2D-9, MUTCD 2009)

13.2.4 Other Regulatory Signs

Pedestrian signs should be placed in advance of the crosswalk. W11-2 should be used for multilane roundabout approaches.

13.3 Marking

13.3.1 Yield Line

- a. Wide dotted white extension of the circulatory roadway edge line must be 18" skip white (2' segment, 2' gap) and shall be curved along the outline of the circulatory roadway. 18" skip white should be used on asphalt and 21" skip white with contrast should be used on concrete.
- b. Yield triangles or "Shark's teeth" should not be used to mark the location at which drivers must yield. Supplemental "YIELD" pavement marking shall be required at all approaches.

13.3.2 Lane use pavement markings, including arrows and solid or dashed lines should be used on multilane roundabouts. For more information refer to Figures 3C-3 through 3C-14 of the 2009 MUTCD.

13.3.3 On all multilane approaches of a roundabout, fishhook arrows "without the dot" shall be used. Within the circulatory roadway, standard arrows should be used. See Figure 3C-2, MUTCD 2009.

13.3.4 All pedestrian crossings shall be marked. Refer to Section 12.4 and Construction Detail T-11A. For multilane roundabouts include conduit and pull boxes for future pedestrian accommodations.

13.3.5 High build thermoplastic rumble strips should be placed in rural roads and high speed approaches of 50 mph or greater. Rumble strips should not be used in residential roads.

- a. The first set of rumble strips should be placed 25' from the nose of the splitter island that are 100' to 150' in length or 175' from yield bar if splitter island is longer than 175'.
- b. Refer to construction detail T-19 for installation.

13.3.6 Marking Materials

Pavement marking material is typically thermoplastic or paint; however, preformed material with contrast should be used on all concrete surfaces. Refer to Section 12 for more information on Pavement Markings Designs Standards.

13.3.7 Guidance on Marking Crosswalks

Refer to Section 12.4 and Construction Detail T-11A.

13.4 Definitions

Central Island—the raised area in the center of a roundabout around which traffic circulates.

Fastest Path Radius—the minimum radius on the fastest through path around the central island measured 5' from any flow line.

Circulating Volume—the total volume in a given period of time on the circulatory roadway immediately prior to an exit.

Circulatory Roadway Width—the width between the outer flowline of the circulatory roadway and the central island, not including the width of any apron.

Departure Width—the width of the roadway used by departing traffic downstream of the roundabout. The departure width is typically no more than the total roadway width.

Decision Sight Distance – from AASHTO Geometric Design manual, section 3. , the distance from the intersection where the driver recognizes that they are approaching an obstacle that will require a maneuver or stop.

Design Vehicle—the largest vehicle that can reasonably be anticipated to use a facility.

Entry Flare—the widening of an approach to provide additional capacity at the yield line and storage.

Entry Path Radius—the minimum radius on the fastest through path prior to the yield line, measured 5' from any flowline.

Entry Radius—the minimum radius of curvature of the outside or right curb at the entry.

Entry Speed—the speed a vehicle is traveling at as it crosses the yield line.

Entry Width—the width of the entry where it meets the inscribed circle, measured perpendicularly from the right edge of the entry to the intersection point of the left edge line and the inscribed circle.

Exit Path Radius—the minimum radius on the fastest through path into the exit, measured 5' from any flowline.

Exit Radius—the minimum radius of curvature of the outside right curb at the exit.

Exit Width—the width of the exit where it meets the inscribed circle, measured perpendicularly from the right edge of the exit to the intersection point of the left edge line and the inscribed circle.

Inscribed Circle - the circle forming the outer edge of the circulatory roadway used to define the size of a roundabout, measured between the outer edges of the circulating roadway. It is the diameter of the largest circle that can be inscribed within the outline of the intersection.

Multilane Roundabout—a roundabout that has at least one entry with two or more lanes, and a circulatory roadway that can accommodate more than one vehicle traveling side-by-side.

Right-Turn Bypass Lane—a lane provided adjacent to, but separated from, the circulatory roadway, that allows right-turning movements to bypass the roundabout. Also known as a right-turn slip lane.

Roundabout – an intersection with 3 or more approach legs, generally circular in shape where continuous flow of traffic is allowed through the use of the yield and merge maneuvers.

Sight Triangle—an area required to be free of obstructions to enable visibility between conflicting movements.

Single-Lane Roundabout— a roundabout that has single lanes on all entries and one circulatory lane.

Splitter Island— a raised or painted area on an approach used to separate entering from exiting traffic, deflect and slow entering traffic, and provide storage space for pedestrians crossing that intersection approach in two stages.

Stopping Sight Distance— the distance measured along the centerline of travel on a roadway required for a driver using the sight triangle or sight line to perceive and react to an object in the roadway and to brake to a complete stop before reaching that object.

Truck Apron – a raised, colored and/or textured concrete surface next to the outside curb of the central island designed to allow large trucks to turn with their rear wheels leaving the roadway and riding up onto the apron area.

Two-Stage Crossing — a process in which pedestrians cross a roadway by crossing one direction of traffic at a time, waiting in a pedestrian refuge between the two traffic streams if necessary before completing the crossing.

APPENDIX A – SIGN LAYOUT TEMPLATES

A-00 Legend (Applies to Sign Details 1 – 58)

Interstate

- A-01 Sign Template 1 – Details of Advance Guide Signs
- A-02 Sign Template 2 – Details of Advance Guide Signs
- A-03 Sign Template 3 – Details of Advance Guide Signs
- A-04 Sign Template 4 – Details of Advance Guide Signs
- A-05 Sign Template 5 – Details of Advance Guide Signs
- A-06 Sign Template 6 – Details of Exit Direction Signs
- A-07 Sign Template 7 – Details of Exit Direction Signs
- A-08 Sign Template 8 – Details of Exit Direction Signs
- A-09 Sign Template 9 – Details of Exit Direction Signs
- A-10 Sign Template 10 – Details of Exit Direction Signs
- A-11 Sign Template 11 – Details of Advance Lane Drop Signs
- A-12 Sign Template 12 – Details of Advance Lane Drop Signs
- A-13 Sign Template 13 – Details of Advance Lane Drop Signs
- A-14 Sign Template 14 – Details of Advance Lane Drop Signs
- A-15 Sign Template 15 – Details of Advance Lane Drop Signs
- A-16 Sign Template 16 – Details of Intermediate Lane Drop Signs
- A-17 Sign Template 17 – Details of Intermediate Lane Drop Signs
- A-18 Sign Template 18 – Details of Intermediate Lane Drop Signs
- A-19 Sign Template 19 – Details of Intermediate Lane Drop Signs
- A-20 Sign Template 20 – Details of Intermediate Lane Drop Signs
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- A-22 Sign Template 22 – Details of Exit Direction (Lane Drop) Signs
- A-23 Sign Template 23 – Details of Exit Direction (Lane Drop) Signs
- A-24 Sign Template 24 – Details of Exit Direction (Lane Drop) Signs
- A-25 Sign Template 25 – Details of Exit Direction (Lane Drop) Signs
- A-35 Sign Template 35 – Details of Advance Lane Drop Signs
- A-36 Sign Template 36 – Details of Advance Lane Drop Signs
- A-37 Sign Template 37 – Details of Advance Lane Drop Signs
- A-38 Sign Template 38 – Details of Advance Lane Drop Signs
- A-39 Sign Template 39 – Details of Advance Lane Drop Signs
- A-40 Sign Template 40 – Details of Advance Lane Drop Signs
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- A-42 Sign Template 42 – Details of Intermediate Lane Drop Signs
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- A-44 Sign Template 44 – Details of Intermediate Lane Drop Signs
- A-45 Sign Template 45 – Details of Intermediate Lane Drop Signs

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- A-46 Sign Template 46 – Details of Advance Guide Signs
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- A-49 Sign Template 49 – Details of Advance Guide Signs
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- A-55 Sign Template 55 – Details of Supplemental Signs
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APPENDIX B – TYPICAL SIGNING AND PAVEMENT MARKING

- B-1 Signing To/From Divided Highway
- B-2 Marking To/From Divided Highway
- B-3 Signing at a Closed Median “T” Intersection
- B-4 Marking at a Closed Median “T” Intersection
- B-5 Signing at a Type A Median Opening
- B-6 Signing at a Type A Median “T” Intersection
- B-7 Signing at a Type A Median Cross Road Intersection
- B-8 Marking at a Type A Median “T” Intersection
- B-9 Signing at a Type B Median Opening
- B-10 Signing at a Type B Median “T” Intersection
- B-11 Signs at a Type B Median Cross Road Intersection
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